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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/852,410	05/09/2001	Stepan Sokolov	SUN1P819	5391
22434	7590	03/18/2004	EXAMINER	
BEYER WEAVER & THOMAS LLP			CHAVIS, JOHN Q	
P.O. BOX 778			ART UNIT	PAPER NUMBER
BERKELEY, CA 94704-0778			2124	5
DATE MAILED: 03/18/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Pre

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/852,410	SOKOLOV ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	John Chavis	2124	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 5-9-01, 1-14-02, 12-3-02, 2-10-03.

2a) This action is FINAL.                    2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-20 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1-20 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on 09 May 2001 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 2-4.

4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.

5) Notice of Informal Patent Application (PTO-152)

6) Other: \_\_\_\_\_.

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. Claims 1-20 are rejected under 35 U.S.C. 102(a) as being anticipated by Steensgaard.

#### CLAIMS:

1. In a Java computing environment, a Java heap suitable for storing Java objects therein, wherein said Java heap comprises:

at least one Java heap portion that is designated for storing Java objects with similar traits.

2. A Java computing environment as recited in claim 1, wherein said at least one Java heap portion is designated to store objects of a class, and wherein only objects of said class are stored in said at least one Java heap portion.

3. A Java computing environment as recited in claim 1, wherein said Java heap includes a plurality of Java heap portions, and wherein each of said plurality of Java heap portions is designated for storing Java objects with similar traits.

Steensgaard  
See the last paragraph of sect. 1.

see the second paragraph of sect. 1.

See again the 2<sup>nd</sup> para. of sect. 1, which indicates "objects can be allocated in a section of the heap reserved for that thread" (i.e. in Java this refers to objects of a Class).

See again the 2<sup>nd</sup> para. of sect. 1, and the title of the invention "Thread Specific Heaps..." (i.e. with similar traits).

4. A Java computing environment as recited in claim 3, wherein each of said plurality of Java heap portions is designated to store objects of the same size.

See the first paragraph of sect. 3.1, with specific reference to the large and small objects.

5. A Java computing environment as recited in claim 1, wherein said at least one Java heap portion is implemented as an array.

The chunks are considered equivalent to the applicant's array, see the second para. of sect. 3.1 And the third and fourth paras. Of sect. 3.2.

6. A Java computing environment as recited in claim 1, wherein said at least one Java heap portion is designated to store objects with similar life spans.

The threads indicated above are considered to have similar life spans.

7. A Java computing environment as recited in claim 1, wherein said at least one Java heap portion is designated to store objects of the same size.

See the rejection of claim 4.

8. A Java computing environment as recited in claim 1, wherein said at least one Java heap portion is designated to store objects that do not reference other objects.

The shared objects are considered to provide objects that do not reference other objects, see the 5th para. from the end of sect. 3.2 and The first para. of sect. 5, which indicates that "an independent thread (which do not reference other objects) or collection of (independent) threads can be isolated by a set of shared heaps.

9. A Java computing environment as recited in claim 1, wherein said at least one Java heap portion is designated to store objects of the same class.

See the rejection of claim 2.

In reference to claims 10 and 14-15, see the rejection of claim 1.

As per claims 11-12 and 18-20, see section 5, specifically paragraphs 1 and 6.

The features of claims 13 and 16 are taught via claim 2.

Claim 17 is taught via claim 4.

### ***Conclusion***

3. Other references, although not specifically cited are considered pertinent to the applicant's disclosure. For example, US Patent 6480862 B1,  
TITLE: Relation-based ordering of objects in an object heap indicates that

Managing available memory is critically important to the performance and reliability of a data processing system such as a computer. Specifically, data used by a computer program is typically stored in a computer within a memory that has a limited address space. In many computers, data is stored in the form of "objects" that are allocated space in a portion of the memory referred to as an "object heap". Objects also often include "references" (also known as pointers) to other objects so that a computer program can access information in one object by following a reference from another object. Typically each computer program has its own object heap, so if multiple computer programs are active in a computer, multiple object heaps may be maintained in the computer.

Furthermore, US-PAT-NO: 6363468 indicates that:

Systems and methods consistent with the present invention allocate memory of a memory array by partitioning the memory array into subheaps dedicated to frequently used memory blocks. To this end, the system collects memory statistics on memory usage patterns to determine memory block sizes most often used in the memory array. The system uses these statistics to partition the memory array into a main heap and at least one memory subheap. The system then allocates or deallocate memory of the memory array using the memory subheap. Furthermore, the system allocates memory

of the memory subheap only for memory blocks having one of the memory block sizes most often used in the memory array.

Also, the reference entitled "Smartheap Technical Specification..." is considered pertinent as indicated in PCT International Report provided.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Chavis whose telephone number is (703) 305-9665. The examiner can normally be reached on 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki can be reached on (703) 305-9662. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jqc  
March 16, 2004



JOHN CHAVIS  
PATENT EXAMINER  
ART UNIT 2124